



# Catastrophic Poultry Mortality Loss: Handling and Disposal Alternatives

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The temperatures in the August afternoons have been warm, and birds are approaching their market age. Temperatures soar to 105°. Fans and the foggers are running constantly. Producers cannot do much besides hose off the house roof, flush waterlines with cool water, pull birds off feed, and 'walk' the birds in order to keep them alive. What if a farm then loses electricity; no fans and no fogger pump? In about 5 minutes birds will start dying from heat stress. Power may return in 20 minutes, but the damage is done. Death losses due to such a stress can continue through the next day. Two to ten percent of a flock can easily be lost in extreme conditions with little warning.

What can a poultry producer do for 4,000 birds that is safe, legal, easy, and affordable?

This publication will help producers develop a plan to deal with this kind of catastrophe, so sound decisions can be made in a crisis situation.

## What does one need to know?

- What is a catastrophic mortality loss?
- What are the regulations?
- Who needs to be contacted?
- What methods and alternatives are available for disposal?

## Catastrophic Mortality Loss

The Oklahoma Department of Agriculture loosely defines a catastrophic loss as any mortality that exceeds the capacity of the current disposal system to accommodate losses within 24 hours. For example, most composters are designed to handle the average daily mortality. Many producers are able to keep plenty of bin space available in the event of minor excessive mortality losses and still utilize the composter. If enough birds are lost, and the composter cannot hold them all without causing serious disruptions in the composting process, then it is a catastrophic loss. The same is true for an incinerator. If mortality occurs and the equipment cannot dispose of the birds within a 24-hour period the loss is catastrophic.

## Disposal Methods and Requirements

The Oklahoma Department of Agriculture (ODA) regulates the disposal of farm animal mortalities. The ODA requires that when there is a catastrophic mortality loss, the Division of Water Quality must be notified, and the mortalities must be disposed of in an approved manner. They have approved four different methods for disposal of poultry mor-

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talities, and these apply to disposal of catastrophic mortality losses.

1. Burial
2. Rendering
3. Incineration
4. Composting

### Burial

The most common method for disposing of catastrophic losses is burial. Regulations require that the site have the type of soil that allows for proper drainage. The local USDA-NRCS office can determine if there is an on-farm site with a soil type that is suitable for burial. When applying for an NRCS Waste Management Plan, which is required, producers should request that a burial site be included in their plan. If a waste management plan has already been completed, the local NRCS office can update the current plan to include burial site information. Choose the site now to avoid this hassle if an emergency arises.

Regulations on carcass burial refer to Title 21 criminal code (Oklahoma Statutes Title 21 Sections 1222 and 1223). Mortalities must be buried within 24 hours and covered with at least 2 1/2 feet of soil (Figure 1).

### Landfills

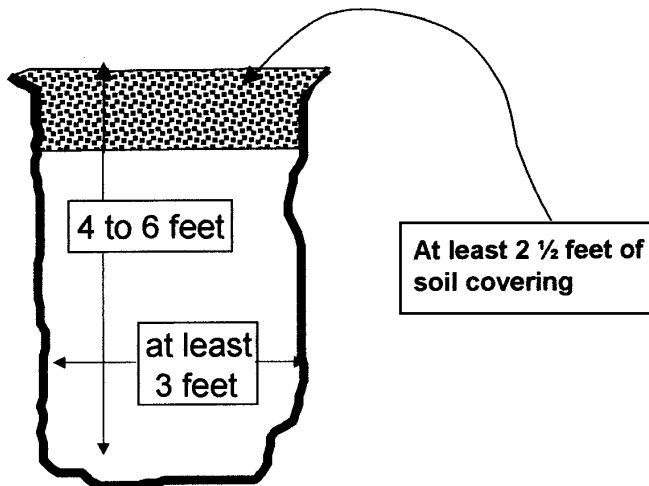
Another form of burial is landfilling. All municipal landfills are approved to handle dead animals. Specific landfills may have their own limits on how many dead animals they will allow, so prior contacts will be necessary. Table 1 lists municipal landfills in eastern Oklahoma that will accept dead animals. Tipping fees will vary, so check prices. Generally, they average around \$23/ton. After-hour deliveries will be unlikely, but individual landfills may have emergency disposal plans. Again, contact the landfill now to make a contingency plan. Some trenching must be done prior to dumping any quantity of mortalities, so a call to the landfill operator prior to delivery is essential.

### Incineration

Disposal of mortalities by incineration is an approved practice in Oklahoma. However, regulations fall into the jurisdiction of the Department of Environmental Quality's Air Quality Division. Rules require emission tests and specific burner requirements, which would be unavailable for large-scale incineration. Incineration of large numbers of birds

**Table 1. Eastern Oklahoma Municipal Landfills that will accept quantities of poultry mortalities.**

<i>County</i>	<i>Landfill</i>	<i>Contact</i>	<i>Phone</i>
Adair	Cherokee Nat. Sanitary Landfill		918-456-0671
McCurtain	City of Broken Bow	Mike Sharrock, on-site manager	580-584-9445
		Mark Guthrie, city manager	580-584-2885
Muskogee	Community Landfill	Gary Veeter	918-682-7284
Pittsburg	City of McAlester Landfill	David Medley	918-421-4900
Wagoner	Broken Arrow Landfill	Bill Ameen	918-355-1688
Tulsa	Quarry Landfill	Joy Stafford	918-437-7773
Tulsa	North Tulsa Sanitary Landfill	Gary Veeter	918-425-0558

**Figure 1. Cross-sectional area of properly sized burial pit or trench for disposal of poultry mortalities.**

would be extremely difficult, impractical, and objectionable due to the emissions and odor, and therefore is not recommended.

### Rendering

Rendering is an approved method of mortality disposal. Rendering means cooking the product to destroy all potential pathogens and converting it into an animal feedstuff. The minimum cooking time is 30 minutes at 200°F. Poultry mortalities must be boiled for 30 minutes. On a farm-scale, a large mortality loss would be nearly impossible to render in a timely manner since rotten, decomposing carcasses do not make a good rendered product. Also, once the birds are cooked they must be used at once or prepared for storage. Storage would require grinding and drying of the cooked carcasses. Even then, whole cooked chickens are difficult to store because of the feather and fat content.

Some individual poultry companies render poultry mortalities through their protein plants. Depending upon the poultry company, their rendering capabilities, the extent of death losses throughout the production complex, disease transmission concerns, and availability of personnel and equipment, this could be an option for individual producers. Producers should contact their company's production management to discuss this possibility in the event of high death loss.

Otherwise, there are commercial rendering companies that will come to the farm and pick up large quantities of birds and render them to produce animal protein by-products such as poultry by-product meal, meat and bone meal, or meat meal. These are commodity products that are sold as pet food ingredients.

Depending on market prices of these commodities, the cost to send poultry mortalities to a renderer will depend on the quality of the mortalities and mileage to the farm. The renderer charges around \$1.10 - \$1.50 per round-trip mile. The quality of the mortalities is measured by a test to determine the degree of decomposition (rotting). Higher quality dead birds will be worth more to the renderer. Table 2 shows the renderers that will accept poultry mortalities in their rendering process.

**Table 2. Commercial rendering companies that will provide on-farm pickup of large numbers of poultry mortalities.**

#### Darling International

Collinsville, OK 1-800-742-1130 or 918-371-2528  
contact: Mike Molini

#### National By-Products

Wichita, KS 316-264-6951 or 316-733-0340  
after hours contact: Butch Fosdick

### Composting

Large mortality losses may also be composted. The ODA allows large scale composting as another alternative for disposing of catastrophic mortality losses. Like burial, composting first requires selection of a suitable site. The NRCS can help with site selection and include this in the Animal Waste Management Plan that they provide. A site must be chosen that will not have excessive overhead water. The site should be within 150 feet of the top of an elevation. This is to prevent water from running into and through the compost pile. Some form or earthen structure can also be constructed to divert water from running through the compost site.

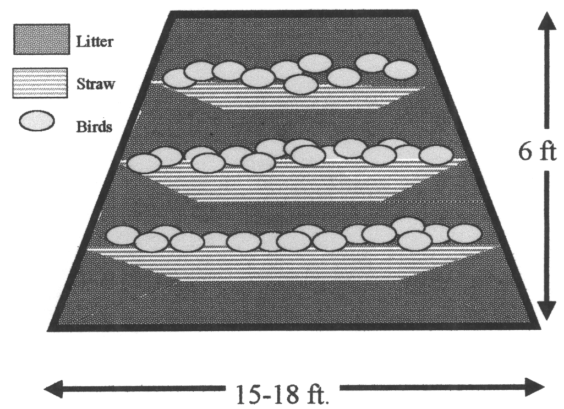
### Outside Windrow (In-Field) Composting

Make a level base layer of litter that is 8" – 12" deep. Add a single layer of mortalities to the litter base and cover with 6

inches of additional litter. Two layers of mortalities will make a windrow that is about 4 1/2 feet high. Three layers will be 6 feet high (Figure 2). The use of a carbon source (sawdust, straw, peanut hulls, etc.) under each layer of birds will produce a better, faster compost. Cover the last layer with 1 foot of litter to prevent scavengers from digging into the pile. Use a front-end loader to turn the windrow after 7 to 10 days.

After another 7 to 10 days, the compost can be spread on land. The use of a long-stemmed thermometer will help monitor progress of the compost. Temperatures of 130° are necessary for optimum composting. When the temperature of the pile begins to drop, the pile can be turned. When temperature peaks again and begins to drop, it's ready for land application.

Since this a form of litter storage, it must be protected from rain. Tarps or plastic sheeting to cover the pile should be available.



**Figure 2. Cross-section of a large-scale, outside mortality composting system showing ingredients, relative proportions, and dimensions.**

### Check List for Handling Large-Scale Bird Loss

#### ☐ Notification:

Dept. of Agriculture, Water Quality Div. .... 405-522-5492

After hours: 800-647-7243 p.i.n.# 2499

Local USDA-NRCS office ..... \_\_\_\_\_

Field Service and/or Live Production Mgr. .... \_\_\_\_\_

#### ☐ Disposal Alternatives:

##### ☐ Bury

Front end loader ..... \_\_\_\_\_

☐ Landfill ..... \_\_\_\_\_

☐ Render ..... \_\_\_\_\_

☐ Compost

Litter ..... \_\_\_\_\_

Carbon source (straw, wood shavings, sawdust)

Plastic tarps/sheets ..... \_\_\_\_\_

#### ☐ Other Needs:

☐ Extra help ..... \_\_\_\_\_

☐ Trucking ..... \_\_\_\_\_

☐ Others ..... \_\_\_\_\_

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## Summary

Whatever method of disposal is chosen, it is important for poultry producers to have a catastrophic plan, which can be included in the NRCS Waste Management Plan. Timing will be important, and there are some regulatory requirements for disposing of catastrophic losses that must be followed. Regulations require contact with the Oklahoma Department of Agriculture's Water Quality Division whenever a producer plans to dispose of a catastrophic mortality loss. The check list gives important numbers to call. The contact with ODA acts as

notification and helps protect the producer in case there is a complaint concerning the disposal. Also, producers should always remember their contracting poultry company field representative. Assistance in handling the birds or a disposal alternative may be available.

Use the check list to record these phone numbers plus any others that might be needed: backhoe operator, rendering company, trucker, and extra help for handling the mortalities. Keep in mind that some composting ingredients need to be purchased when this method is chosen.

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